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ABSTRACT

Evidence from followup studies of teacher education graduates indicates that teachers do not value certain major components of their teacher education programs and do not really remember or know what their teacher education programs attempted to teach them. While educational experts cite the extensiveness and comprehensiveness of teacher education programs, teacher candidates consistently devalue the usefulness of the programs, demand change, and apparently want more courses added. This paper explores the problem of why there is such a dysfunction between the teacher education program and the teacher candidates' perceptions of the program's usefulness. A cognitive developmental approach to teacher education is recommended, based on the work of William Perry, who described intellectual and ethical development as occurring in a sequence of stages, each representing a qualitatively different structure or set of assumptions for perceiving knowledge and values. A curriculum is outlined that would match program content with the stage of the student's cognitive development. (JD)

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COGNITIVE DEVELOPMENT:
A PERSPECTIVE FOR TEACHER DEVELOPMENT

by

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This paper specifically addresses the issue of cognitive development as it might apply to the development of the pre-service teacher candidate. The usefulness of a cognitive developmental approach to the education of teacher candidates will be established by: 1) citing the evidence from follow-up studies which explicate the perceived uselessness of teacher education programs by pre-service and inservice teachers; 2) citing the state of the art in teacher education; and 3) explicating why and how a cognitive developmental approach to teacher education programs might diminish the apparent dysfunction between teacher education programs and their perceived uselessness by teacher candidates.

I. Evaluation of Teacher Education Programs

Research confirms that a high percentage of new teachers are looking toward their training to expand their social awareness and foster a profound sense of purpose (Howsam et al, 1976). Although teacher candidates appear to be hoping for grand events to take place in their teacher education programs and such authors such as Silberman (1970) assert that students selecting teaching as a career know exactly what teaching is about, follow-up studies indicate that other circumstances exist.

First year teacher studies and follow-up studies illuminate the successes and failures of teacher education programs as perceived by the clientele of those programs.

As Astin states in, Four Critical Years, college can have a significant impact on students. But follow-up studies of students graduating from the College of Education at The Ohio State University certainly indicate that the impact of those four critical years is less than positive in relationship to their career choice of teaching. In the 1978 Ohio State University Follow-Up Study, the suggestion from personal interviews of first year teachers was that these teachers seemed remarkably unchanged by the experience called college, especially when college means their teacher education programs (deVoss, 1978). In the 1979 Follow-Up Project from the Ohio State University, it was reported that "in general it appears that after three years on the job, specific lessons learned at school are forgotten and the work world and its more immediate experiences contribute to teacher decision making to a much higher degree than teacher education programs" (deVoss, 1979). Further it was found that after four years in a teacher education program, students speak non-committally about their programs (deVoss, 1979). Many teachers, in fact, report that they know no one ever taught them how to teach (deVoss, 1979).

The 1978 Follow-Up Study of the University of Maine at Orono College of Education indicates that fully 90% of the graduates from 1975-1977 feel that major changes should be made in their teacher education programs (Drummond, 1978). Consistently, graduates state that foundations courses and liberal arts courses are of little

or no use to them as teachers (Drummord, 1978; deVoss, 1980). The courses to which students respond favorably appear to be those courses in which there is direct hands-on experience such as student teaching and/or field work (Drummond, 1978; deVoss, 1978, 1979, 1980).

Katz et al (1981), in summarizing twenty-six follow-up studies, indicate that 48% of the 70 recommendations contained suggestions for change in the curriculum that were specific enough to act upon and that not one of the 33 recommendations suggested that a topic or activity be deleted from the program. Implicit within this finding is the thought that teacher education programs when reviewed by their clientele, teacher candidates and in-service teachers, are obviously lacking in areas of concern to teachers.

In summary, it appears that follow-up study evidence points to some simple, but often negative conclusions. Teachers do not value certain major components of their teacher education programs and teachers do not really remember or know what their teacher education programs have attempted to teach them.

II. Teacher Education Programs

It seems hard to imagine that teacher candidates consistently devalue the usefulness of teacher education programs, consistently demand changes in their teacher education programs and in large percentages (48%) want

more courses added to their teacher education programs. These things are especially hard to imagine in light of what prominent authors such as Howsam et al (1976), Haberman and Stinnett (1973), The National Council for Accreditation of Teacher Education (NCATE) (1982), Standards for Colleges or Universities Preparing Teachers (1975) and Silberman (1970) espouse as the extensiveness of teacher education curricula.

Howsam et al, in the American Association of Colleges for Teacher Education (AACTE) report, Educating a Profession, cite the following as major components in a basic teacher education program:

1. general or liberal studies which has as its major purpose helping teachers become learned persons because they are responsible for the intellectual development of children;

2. undergirding disciplines which have the twofold purpose of:

- a) strengthening the conceptual and valuational grounds for professional practice; and

- b) supporting the development of a level of personal understanding and involvement that distinguishes the professional from the technician;

- 3) academic specializations which are usually done outside of the college of education and has as its purpose providing in depth knowledge of content in the chosen area;

- 4) professional component which has as its purpose

providing interdisciplinary and conceptual illumination of the issues, problems and procedures confronting contemporary educators everywhere so that more professional and humane public action might ensue;

5) field experiences which have as their purpose the interlocking of practice and theory;

6) special emphasis concerning children with learning disabilities; and

7) significant subculture studies which have as their purpose allowing teachers better understanding of diversity.

Haberman and Stinnett (1973) state that the following are components of a teacher education program:

1) general education and specialization offered as the basis for professional study;

2) education of the nature of knowledge and the professionalization of the essence of knowledge;

3) education concerning learning principles;

4) education concerning childhood and adolescent development; and

5) education for the enhancement of the development of the self.

NCATE standards (1979) list the basic components of teacher education programs as:

1) general studies component comprised of symbolics of information, natural and behavioral sciences and humanities;

2) professional studies component comprised of all of the attitudes, knowledges and skills required of a teacher. The elements of the professional studies component are:

a) content for the teaching specialty dealing with appropriate subject matter in the chosen specialty;

b) humanistic and behavioral studies dealing with the problems of education. When the problems of education are dealt with through history and philosophy, the studies are labeled humanistic. When the problems of education are dealt with through such courses as psychology, sociology, anthropology, economics and political science, the studies are labeled behavioral;

3) teaching and learning component which provides the prospective teacher with principles of practice; and

4) a practicum which provides a period of experience in professional practice during which the student tests and reconstructs the theory which s/he has evolved and further develops his/her teaching style (NCATE, 1978, pp. 5-7).

The state of Ohio Standards for Colleges and Universities Preparing Teachers explicates the components of teacher education programs to be:

1) the body of knowledge, skills, attitudes and values determined to be necessary for effective teaching for each field in which the college prepares teachers;

2) the curriculum shall adequately reflect identified and significant academic and social concerns

which include:

- a. the teaching of reading;
 - b. human relations related to both teaching in a culturally pluralistic society and working effectively with students;
 - c. analysis and evaluation of one's performance skills as they relate to teaching behavior;
 - d. dealing with behavior problems; and
 - e. selection, preparation and effective utilization of educational media to facilitate learning;
- 3) clinical experiences which provide experience involving the application of principles and theory in teaching and learning; and
- 4) field-based experience for which specific learning objectives have been set to assure increasing proficiency in performing the various teaching responsibilities under actual school conditions (1975).

Silberman, in his rather critical expose' of American education contained in Crisis in the Classroom, contends that the components of teacher education are:

- 1) the liberal education of teachers; and
- 2) the professional education of teachers.

The compilation of components of teacher education programs as explicated by NCATE, the Ohio standards, Haberman and Stinnett, Howsam et al, and Silberman appears graphically as follows:

	Silberman	Haberman and Stinnet	NCATE	Howsam et al	Ohio Standards
General Studies	X	X	X	X	
Undergirding Disciplines				X	
Academic Specializations		X	X		
Professional Component	X	X	X	X	X
Field Experiences		X	X	X	X
Learning Disabilities					X
Multicultural Studies					X
Child and Adolescent		X			
Enhancement of Self		X			
Humanistic Studies			X		
Behavioral Studies			X		
Teaching and Learning Component			X		
Practicum			X	X	X
Knowledge, Skills, Attitudes, Values of Effective Teaching					X
Teaching of Reading					X
Human Relations					X
Discipline					X
Media					X
Clinical Experiences			X	X	X

III. Cognitive Development: An Alternative to Dysfunction

To this point, the reader has seen that teacher candidates are less than pleased with components of their teacher education programs and, yet, the list of components within teacher education programs seems inexhaustible. With all that is offered, and all that is being done in teacher education programs, the question that remains is : "Why is there such a dysfunction between the teacher education program and the teacher candidates' perceptions of the program's usefulness?"

Fuller and Bown (1975) speculate about why teachers do not know what their teacher education programs have taught them and why teachers devalue their teacher education programs. Fuller and Bown insist that teacher candidates are obviously different from one another and, yet, those differences are recognized by teacher education, but rarely provided for in the teacher education program. Evidences of this failure to provide for the differences in the teacher candidates are:

1. assignments to education professors, courses, laboratory experiences and supervising teachers are uniform and random, or are intuitive and rarely tailored to differing needs in an organized systematic way;

2. teacher education is not speaking to teacher candidates where they are. Feelings of frustration and anger about teacher education are typical among teachers;

3. the process now emphasized in most teacher education programs is awareness of content and method.

The teacher is merely exposed. Awareness is assumed and little attention is given any other process (Fuller and Bown, 1975).

Additionally, Fuller and Bown (1975) state that " it seems pretty safe to assume that most teacher education programs meet the needs of teacher candidates in a sequence different from the sequence in which teacher candidates feel the need". At a time when teacher candidates are worried about how students are treated within classrooms and if they, themselves, as teachers can survive and control classrooms, teacher education programs are providing one of the most poorly evaluated segments of the teacher education program --- liberal and/or general education or the history and philosophy of education. These courses have been consistently devalued by teacher candidates. These courses are viewed as useless wastes of time by teacher candidates (deVoss, 1978, 1979, 1980; Drummond, 1980).

Haberman and Stinnett (1973) assert that to know how students learn should be a basic guide for teachers. It is certainly not unusual for graduates of teacher education programs to be expected to be able to describe in general terms the physical, emotional, cognitive and social development of the age group with which they will teach. The amazing thing about the university and this component in teacher education programs is its widespread neglect concerning its own clientele, the teacher

candidates (Haberman and Stinnett, 1973). Howsam et al (1976) support this purpose as they stipulate that the education of teachers should emerge primarily from the needs of the personnel that the teacher education program prepares (i.e. teacher candidates).

Teacher educators expect that teacher candidates be able to discern where the public school student lies in a cognitive sense each time the teacher educator tells the teacher candidate to meet the student at his/her level, as well as, each time teacher educators speak to teacher candidates about individualization. Howsam et al (1976) would support that thought of individualization and meeting each student at his/her level if only that were exemplified in the university setting. Howsam et al state that teaching in the colleges and universities should model for the kinds of practices expected in the schools. Professors of education should exemplify what they explicate---we, in the university, must meet our students where they function, we must individualize to optimize.

To these ends, meeting the needs of individual teacher candidates in a collegiate setting ; exemplifying and modeling the kinds of practice expected in schools; and reducing the perceived uselessness of teacher education programs by teacher candidates, a cognitive developmental approach to teacher education and teacher development follows.

Cognitive developmental theories conceptualize and explain the process of student development in terms of the

individual's thought processes and the influence of those cognitions upon certain activities (Rodgers, 1983). In simpler terms, cognitive development deals with the way in which students think.

Perhaps a reason for the apparent dysfunction between teacher education programs and the teacher candidates' perceptions of their uselessness lies in the area of cognitive development. Is there a mis-match between the teacher education program and the cognitive level of the teacher candidates?

The theoretical framework which undergirds this conception of teacher education programs was posited by Perry in 1970. The following is a brief overview of the Perry scheme.

The work of William Perry and his associates (1970) has been utilized as a basis for instructional approaches. Perry's schema describes intellectual and ethical development as occurring in a generally irreversible sequence of stages in which each stage represents a qualitatively different structure or set of assumptions for perceiving knowledge and values. Individuals who are at different stages of development think about knowledge in a different way, and to some extent, reflect those differences in their ways of learning. According to this theory, students through nine developmental stages or positions. In a general sense, individuals move from simplistic, absolute stances vis-a-vis knowledge and

values to a complex, pluralistically grounded perspective. The following are three basic divisions of the scheme.

Dualism

The first three positions represent a dualistic structure for viewing knowledge and values. The dualistic learner assumes that all information can be classified as either right or wrong and that uncertainty is some sort of an error. For the student at these positions, learning is a matter of finding the right answers. In moving from position one to position three, the student successively alters his/her explanation for uncertainty increasingly accepting its legitimacy.

Relativism

In the movement through positions four, five and six absolute right and wrong conceptions of knowledge and values are displaced. In position four, multiplicity, the student perceives uncertainty to be legitimate and pervasive; yet, it exists in an unordered diversity. In position five, all knowledge is seen as contextual and relativistic; at this point, concern with the nature of knowledge interacts with the student's personal life. The student seems to generalize relativistic assumptions to the realm of self and identity. At stage six, the individual seems to recognize that his/her identity will be 'created' by acts of commitment.

Commitment to Relativism

In contrast to the earlier positions, the change defining the last three positions are affective rather than structural. Movement through these positions involves the individual's recognition that affirmation of identity/commitment is a process which will demand continual attention.

The Perry scheme provides a way of conceptualizing student development that describes and explains the interweaving of intellect and identity. The nine positions define a relevant set of developmental goals for collegiate instruction. The ultimate goal, the affirmation of identity through choice, bridges Erickson's concept of development. However, the scheme, like other cognitive developmental perspectives, outlines steps along the way that serve as intermediate goals and suggests the importance of cognitive conflict in moving the students along the path.

Perry's scheme of cognitive development explicates the ways in which students function intellectually. Schaefer (1967) states that pre-service teacher education programs are intended to provide a foundation for career-long development as an inquiring scholar-teacher and since this is teacher education's intent teacher education must emphasize ways of knowing. Statistically, at The Ohio State University, the undergraduate population falls along

the Perry scheme as follows: 85% dualistic students; 10-15% multiplistic students; and 3-5% relativistic students. (Radabaugh, 1982) Interestingly enough, one would be hard pressed to find a relativistic thinker at any point before the senior year and then s/he would be a truly rare commodity. Perhaps teacher education programs are perceived as failing at such alarming rates because the courses are taught at levels befitting the relativistic, contextual abstract thinkers and, at best, only 3-5% of our student teachers might qualify. It seems that there could be a systematic mismatch between the course content and delivery and the teacher candidates cognitive development and mode of cognitive functioning.

The following is a suggested re-organization of the teacher education curriculum based upon the Perry scheme of cognitive development. The teacher education program in its re-organized format attempts to address the projected stages of the teacher candidates and their expectations, needs and desires.

The basic assumption which underlies this conceptual re-organization of teacher education programs is that teacher candidates begin their programs in Perry's dualistic stage of development and thus demand clear cut, concise, accurate hands-on experiences and knowledge. Andrews, in his article, "A Curriculum to Produce Career Teachers for the 1980's" (TIP, 1967) insists that teacher candidates entering education should be exposed to an introduction to teaching not an introduction to education.

Knowing that dualistic teacher candidates enter the courses in the colleges of education and knowing that teaching, in Andrews sense, has many more tangible aspects than does education, per se, the teacher education program could welcome the teacher candidates by meeting their needs in a reality based approach to their careers.

In the freshman year, teacher education programs could immerse teacher candidates in the concrete, clear, concise knowledge that is existant concerning teaching. Such things as teacher effectiveness literature, microteaching skills, reinforcement schedules from behavior modification literature, classroom management techniques, systems of evaluation, instructional alternatives, clinial and field-based experiences, information concerning teacher perceived problems and ways to circumvent those problems could all be dealt with in clear, concise, highly structured fashions within the first year in college. All of this could be done to meet the dualist where s/he lies. All of this could be done to promote the teacher candidates ability to function well, thus increasing their satisfaction with the teacher education program. As Howe (1967) states, " to emphasize experience is not to demean the university". Interestingly enough, experience in the concrete could enhance the credibility of teacher education programs because experience is a major requisite for dualisitic students.

Once teacher candidates' satisfaction were increased by meeting them at an appropriate cognitive level with concrete information and experience designed to inform teaching and their careers, the basic knowledge of the teacher candidate could be increased through the general education component of the curriculum. This increased knowledge could transpire during the sophomore and junior years.

Twelve basic general studies components have been identified and explicated by Tykociner in Smith's, Design for a School of Pedagogy (1969). These areas are:

1. the arts--- architecture, choreography, dramatics, graphic arts, industrial design, landscaping, literature, music, painting and sculpture;
2. symbolics of information --- linguistics, mathematics, logic, and information theory;
3. physical sciences--- physics, chemistry, astronomy, geology, and mineralogy;
4. biological sciences--- botany, zoology, taxonomy, morphology, cytology, genetics, physiology
5. psychological sciences--- experimental, developmental, abnormal and others;
6. sociological sciences--- sociology, human ecology, demography, social institutions, ethnography;
7. sciences about the past--- history of the world at large, aggregates of human beings, and the society and its culture;
8. life sustaining--- agriculture, medicine,

technology, and national defense;

9. regulative sciences--- jurisprudence, political sciences, economics, and management as administration;

10. disseminative sciences--- education, library sciences, journalism and others;

11. zetetic sciences--- taxiology, problematology, general methodology and others;

12. integrative sciences--- philosophy, theologies, and others.

The issue concerning cognitive development and the general studies component of teacher education programs may be viewed minimally in two ways. Teacher education programs could allow the general education component to stay in tact in sequence and allow undergraduate teacher candidates elective possibilities among the twelve areas listed. If this were done, the task of teacher education programs developmentally speaking would be to ensure that the course contents and delivery systems were arranged according to the cognitive stages of the teacher candidates. Or secondly, teacher education programs could re-arrange the twelve areas of general education in an array of courses which ranges from most concrete to most abstract. This second arrangement would require, as B.O. Smith suggests in Design for A School of Pedagogy, that there be no elective system and that course content, delivery and sequence be matched with the cognitive stage of the teacher candidates.

As the fourth and final year of the teacher education program approaches, content for the teaching specialty, special methods and practicums could be sequenced and planned to make use of the shift in teacher candidates' ability to perceive information and process that information in a more varied fashion than has ever before been the case due to their developmental growth over the previous three years. At this point, according to the Perry scheme, teacher candidates are more fully capable of multiplistic thought with a rare few ready for reativitic endeavors. At this time, teacher candidates are more able to analyze, problem solve and delineate aspects of practice and theory.

In summary, teacher education programs could be re-organized developmentally while keeping all of the mandated NCATE components intact. The remaining question is : "Why would teacher educators want to go to all that trouble?"

There are several researchers who contend that the higher the stage of the person, the more likely the chances are of their performing optimally. The following excerpts are taken from Sprinthall and Sprinthall (1980). Persons identified in college as functioning at higher, or more complex stages than their colleagues were shown to function more successfully at the time of follow-up. In each case, traditional measures of academic/scholastic aptitude did not predict success while estimates of cognitive development did.

In regard to understanding the cognitive development of teachers, Sprinthall and Sprinthall (1980) further state that if in teaching we can approximately assess a person's stage then we can make certain behaviorally based predictions. Lower 'stage' denoted teachers, for instance , will generally employ high structured instruction regardless of pupil response. Such teachers will use limited numbers of teaching models, and will be quite 'direct' using Flander's terminology. The pupils will have no impact on the teacher. Similarly, the reverse would hold in predicting the performance of 'higher' stage denoted teachers. This teacher would employ different strategies with groups of children according to their current functioning. It is probable that teachers' developmental levels and their potential for responding to pupil needs are positively related.

If a goal of teacher education is to enhance teacher candidates to become successful, competent, inquiring, career scholar-teachers, then a task of teacher education must be to function developmentally for those teacher candidates. Teacher education programs must meet their teacher candidates where they are developmentally and proceed to produce climates of growth in a cognitive sense.

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